

1 **COMPLETE LIST OF ALL OF THE CLAIMS**

2 1-2. (canceled)

3 3. (withdrawn):

4 4-5. (canceled)

5 6. (new) A method for objective measurement of video quality using a wavelet transform,
6 comprising the steps of:

7 (a) producing source video wavelet coefficients for each frame of a source video
8 sequence by applying a 2-dimensional wavelet transform to each frame of said source
9 video sequence;

10 (b) producing processed video wavelet coefficients for each frame of a processed video
11 sequence by applying a 2-dimensional wavelet transform to each frame of said
12 processed video sequence;

13 (c) computing a difference vector for each frame, whose element represents a subband
14 difference, which is obtained by summing squared errors between said processed video
15 wavelet coefficients and said source video wavelet coefficients in said subband block,
16 thereby producing a sequence of difference vectors;

17 (d) producing a final difference vector by averaging said sequence of difference
18 vectors; and

19 (e) producing an objective video score by taking an inner product of said final
20 difference vector and a weight vector.

- 1 7. (new) A method for objective measurement of video quality using a modified 3-
2 dimensional wavelet transform, comprising the steps of:
- 3 (a) producing source video wavelet coefficients for each frame of a source video
4 sequence by applying a 2-dimensional wavelet transform to each frame of said source
5 video sequence;
- 6 (b) producing processed video wavelet coefficients for each frame of a processed video
7 sequence by applying a 2-dimensional wavelet transform to each frame of said
8 processed video sequence;
- 9 (c) computing a difference vector for each frame, whose element represents a subband
10 difference, which is obtained by summing squared errors between said processed video
11 wavelet coefficients and said source video wavelet coefficients in said subband block,
12 thereby producing a sequence of difference vectors;
- 13 (d) producing a second sequence of difference vectors by applying a 1-dimensional
14 wavelet transform to said sequence of difference vectors in the temporal direction;
- 15 (d) producing a final difference vector by averaging said second sequence of difference
16 vectors; and
- 17 (e) producing an objective video score by taking the inner product of said final
18 difference vector and a weight vector.
- 19 8. (new) A method for objective measurement of video quality using spatial and temporal
20 frequency differences, comprising the steps of:
- 21 (a) computing spatial and temporal frequency differences between a source video
22 sequence and a processed video sequence, thereby producing a spatial and temporal
23 frequency difference vector for said source video sequence and said processed video
24 sequence; and

1 (b) producing an objective video score by taking the inner product of said spatial and
2 temporal frequency difference vector and a weight vector.

3 9. (new) The method in accordance with claim 4 wherein the step (a) is performed by
4 applying a transform to said source video sequence and said processed video sequence
5 in the spatial and temporal directions.